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ABSTRACT

The South Carolina Rural Interdisciplinary Program in Training (SCRIPT) provides practical educational experiences for students from multiple health care majors in rural communities in the Low Country (Southern region) of South Carolina. Faculty from the Medical University of South Carolina joined with staff from the Low Country Area Health Education Center to plan and present coursework in a 5-week intensive summer session. South Carolina has the nation's second highest rate of diabetes, and high rates of complications are very prevalent in the Low Country. SCRIPT students were linked with The Diabetes Connection, a Hampton County project to determine the effects of a community diabetes screening and education project on screening participants. Teams of SCRIPT students developed and conducted a telephone survey of screening participants. Of 39 respondents, almost all had continued medical care and had modified their diet, about half had made some changes in their physical activity, but most had neglected foot care and eye followup. The most important motivator for changing behaviors was support from family and friends, while barriers to controlling diabetes included lack of support, lack of funds, and feelings of isolation. As a result of the SCRIPT survey, The Diabetes Connection developed a diabetic support and education group, cooking classes, a walking program, and yearly screening events. (SV)

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Creating An Academic And Rural Community Network To Improve Diabetes Care

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Abstract

The South Carolina Rural Interdisciplinary Program in Training (SCRIPT) is a United States Government funded rural immersion experience that is team taught by faculty of the Medical University of South Carolina, staff of the Low Country Area Health Education Center (AHEC) and selected community members. Quality Improvement (QI) has been a central component for the rural interdisciplinary course since 1995. South Carolina (SC) has the nation's second highest rate of diabetes, but only half even know it. High rates of complications of diabetes are very prevalent in the Low Country with one county having the highest mortality rate in the State. Students were linked with The Diabetes Connection, a Healthy Communities Project of PRO Hampton County with the aim "to determine the effects of a community diabetes screening and education project on screening participants". The key measures of improved patient performance on self-care were: (1) 87% saw a doctor (2) 35% added care changes to daily schedules (3) 38% valued self-care more (4) 79% initiated routine blood sugar checks (5) 79% changed food purchased and eating habits. Lessons learned included: (1) Changes in self-care can be affected by a combined screening/education initiative; (2) Changes in self-care can be measured. The ongoing community action has united academic and community groups and facilitated student skill development in quality improvement and changed behaviors of a target group of diabetic patients in a rural community setting.

The South Carolina Rural Interdisciplinary Program in Training (SCRIPT) provides practical educational experiences for students from multiple health care majors (eg. Medicine, nursing, occupational therapy, physical therapy, health administration and other) in a rural community in the Low Country (southern region) of South Carolina, USA. Faculty from the Medical University of South Carolina join with the Low Country AHEC staff to plan and present coursework in a five-week intensive summer session. Two sessions of approximately 25-30 students each are conducted each summer.

The SCRIPT Program

Since 1993, the South Carolina rural Interdisciplinary program of Training (SCRIPT) as prepared 161 students from multiple disciplines to be culturally sensitive health professionals prepare to function in a multidisciplinary health care team in a rural setting. Students from health administration, medicine, nursing, pharmacy, and occupational and physical therapy have enrolled in a 4 semester-hour elective offered in an intensive 5-day-a-week, five week session. Students are immersed in a rural community through practice in their own specialty, collaboration in interdisciplinary team activities, partnership with community residents in the promotion of health, and participation in community social activities. By actually living and working in a rural community, students experience the challenges of rural health care and observe the opportunities for a positive, high quality lifestyle, both personally and professionally. A January 1999 survey of program participants who had earned degrees in their respective professions found that 51% of the SCRIPT participants had chosen rural practice.

The SCRIPT program is truly a collaboration between rural communities in the Low Country of South Carolina, the Low Country Area Health Education Center, the Medical University of South Carolina, and a number of other institutional and community partners. Families in several communities provide housing for the students during their experience. University faculty facilitate interdisciplinary interaction and exposure to diverse cultural patterns in the community. AHC staff make the arrangements for housing and training sites and provide educational support services and classroom facilities. And health professionals from the communities integrate students into the rural health care culture as they precept them in clinical experiences. Funding from the Bureau of Health Professions of the United States Government provides a stipend for students and financial support for human and material resources.

SCRIPT Learning Activities

Part of the learning experiences in SCRIPT centers on the completion of a student Community Oriented Primary Care (COPC) project. Continuous Quality Improvement (QI) concepts and tools were integrated in all course learning activities in 1996. The "Model for Improvement", proposed by Langley, Nolan and Nolan (1994), was provides a framework for class learning activities and also for facilitating ongoing improvements in the course. The QI process focuses on three primary areas of concern:

- AIM: What are we trying to accomplish?
- CURRENT KNOWLEDGE: How will we know that a change is an improvement? What measures will we use?
- CYCLE FOR IMPROVEMENT: What changes can we make that will result in improvement?

• The term *continuous improvement* is used in this article to encompass the concepts of continuous quality improvement (CQI).

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One, perhaps more, of change is chosen for pilot testing using the Plan-Do-Study-Act (PDSA) Cycle. The PDSA Cycle is basically a "trial and learning" approach that applies the scientific method. The process starts with a hypothesis that the chosen change will lead to an improvement. Next the change is planned and implemented, relevant data are collected and analyzed, and conclusions are drawn regarding the hypothesis. The next step to take is based on what was tried and learned from the cycle for improvement. The identification of the next step leads to initiation of another PDSA cycle and continual movement toward improvement.

SCRIPT students learn and apply the model primarily in two course activities: a personal improvement (PIP) project and the community-oriented primary care (COPC) project. The students are introduced to the model and given the PIP project instructions at the orientation session. They have about a month to complete their PIP project. On the first (didactic) week of practicum, the students give a brief oral report of their PIP project and submit a written report.

Using CI to Improve the COPC Learning Activity

Based on 1996 and 1997 student feedback, several opportunities for improving the COPC learning activity were identified:

- Lack of focus, clarity, or specificity of projects
- Lack of student input into the project -- students felt that the 1997 COPC project was too "packaged" and they simply did what they were told to do
- Lack of time to define, develop and fully implement a COPC project -- the groups had five Fridays to work on their COPC projects. It took a lot of time to understand the needs of the communities and to plan what to do. The six-week session did not give much time to pilot test and to implement a change.
- Linking Academic Learning Activities to Community Action

To deal with the problem issues, the faculty and Low Country AHEC staff decided to narrow the scope and increase the specificity of the COPC project. The Diabetes Connection (DC) of the PRO Hampton Healthy Communities Project was identified as a good community linkage for the COPC project for several reasons: (1) it is a viable local community health initiative; (2) one member of the Low Country AHEC staff was already heavily involved with the DC project; (3) the PRO Hampton Project had already completed a community needs assessment, in which diabetes was identified as a top priority community health problem; and, (4) the DC completed a health screening in March 1998 and had expressed a need to conduct a follow up impact study of the screening.

The SCRIPT team met with key DC community residents in May 1998, primarily to clarify the overall aim of the DC ("to decrease the morbidity and mortality due to diabetes in Hampton County") and to identify a DC need that students could address. The DC identified need was to "know what lifestyle/behavior changes occurred among the target population since the screening, and the driving forces and barriers to lifestyle/behavior change". The information would be used to guide the DC committee members and community health groups/individuals in deciding the most appropriate interventions (e.g., education, support group) to address the needs of the diabetes community. An integral part of the plan was a format that would be used to present the community need, how it was identified and the significance of the need to the SCRIPT students. In addition, student feedback and written course evaluations would be used to determine if the change in the approach to the COPC project would also a yield a course improvement in 1998.To let us know whether these interventions would result in course improvements in 1998.

The Diabetes Connection Community Action

The Diabetes Connection is an ongoing Healthy Communities project in rural Hampton County, South Carolina. It seeks to reduce morbidity and mortality related to diabetes in a state that ranks second in prevalence of diabetes. Since its inception in 1997, the Diabetes Connection has involved the following activities: (a) financial support of two Hampton County health professionals to become certified diabetic educators, (b) ongoing communication with residents via a monthly column in the local newspapers and periodic radio spots, (c) development of a monthly diabetic support group, and (d) development of a screening process for diabetics and those at risk for diabetes to increase early diagnosis of diabetes.

On March 28, 1998, 159 individuals were screened by the Diabetes Connection. Thirty-eight percent (60) of those screened had been previously diagnosed with diabetes. Sixty-two percent (99) of those screened were at risk for diabetes, based on the American Diabetes Association risk assessment test. Over half (60) of those at risk had elevated blood pressure, 14 had fasting plasma glucose (FPG) levels between 110 and 125mg/dl or Impaired Fasting Glucose (IFG), while 11 had FPG levels greater than 126 mg/dl. Of the 60 diagnosed diabetics who were screened, 77% (46) had elevated blood pressure, while slightly less than half (27) had elevated Hemoglobin A_1C levels. Over half (39) of the diagnosed diabetics who were screened needed follow-up for potential kidney and foot complications and 25% (15) were advised to receive follow-up eye screenings.

From the initial planning stages, The Diabetes Connection realized the need for post-screening follow-up of its participants, especially those at high risk for the complications associated with diabetes. Several steps were taken to provide adequate follow-up care. Immediately

following the screening, clinicians were contacted by letter and informed of their patient's screening results. Results falling outside of the normal reference ranges and recommendations for follow-up of physical findings were highlighted. Providers were urged to contact patients to schedule appointments for further assessment.

Data were needed to evaluate the Diabetes Connection's screening efforts.
The following questions provided the focus for structuring the evaluation: (1) Had follow-up care been obtained by those for whom it had been recommended? (2) Had the recommended behavior changes occurred? (3) What were the barriers that prevented follow-up care and behavior modification?

The 1998 COPC Project

As a result of pre-planning, the 1998 students started their COPC project with a specific project aim already defined. They immediately focused their attention on identifying the measures or indicators they would use to let them know they were achieving the project aim, and specific change(s) they could try and test that would help them achieve the project aim.

Two interdisciplinary teams of students enrolled in the South Carolina Rural Interdisciplinary Program of Training (SCRIPT) back to back six-week sessions focused on finding a way to assist the Diabetes Connection in evaluating the screening activities.

As part of the SCRIPT experience, students form interdisciplinary teams of four to five members worked closely with Diabetes Connection committee members to evaluate findings and plan further action. The first session team of 27 students chose to design a telephone survey as an evaluation tool. The survey was validated in three steps: (a) Two diabetes experts reviewed the first draft and recommended changes, (b) The survey was presented to the Diabetes Connection for a second review, and (c) A pilot telephone survey was conducted to determine the ease of conducting the survey via telephone. The final revision was presented to a team of SCRIPT students enrolled in summer session for implementation and evaluation.

The second session SCRIPT students fine-tuned the survey tool and then conducted a telephone survey of 57 of the 60 diagnosed diabetics who had been screened. Thirty-nine (68%) of the 57 individuals telephoned were reached and completed the survey.
Findings

Of the 39 respondents, 34 (87%) had been seen by a health care provider since the screening. Data revealed that while needed rechecks for cholesterol, high blood pressure, and blood glucose control had been obtained, foot care and eye follow-up had been neglected.

The number one lifestyle change after the screening was in the area of nutrition and diet modification, with 31 (100%) responding that they had eaten healthier since the screening. In addition, 46% (18) of respondents said they had made some change in their physical activity, attributing an increased desire and awareness of the need for this change to the screening.

Support by family and friends was the number one motivator for changing glucose monitoring, diet, and exercise behaviors. Overall, the average respondent felt they were knowledgeable about their diabetes and that the screening reinforced this awareness. Those surveyed had a strong desire for the screening to be a yearly event and for the monthly support and education group to provide the knowledge and skills training needed to help them improve in the areas of diet, exercise, and glucose monitoring.

Barriers to control of their diabetes included lack of social support, lack of funds, and a feeling of isolation. The factors associated with improved control of diabetes were social support and health insurance, which also facilitated access to care.

Recommendations

The SCRIPT students made three recommendations based on their analysis of data (QI). First, there is a need for improved access to care among diabetics in Hampton County. Second, The Diabetes Connection should increase its social support network. Finally, skills training in menu preparation, cooking methods, and exercise should be provided for diabetics.

Community Impact

Since the 1998 screening and follow-up survey The Diabetes Connection has increased its activities based on the evaluation. A diabetic support and education group has been organized and meets monthly. Cooking classes facilitated by a local registered dietitian and a home economist are offered quarterly. Screening has become a yearly event. And a walking program is being developed. With the help of SCRIPT students, The Diabetes Connection has taken steps to improve diabetes outcomes in rural Hampton County, South Carolina. The ongoing community COPC project has united academic and community groups and facilitated real change related to student knowledge and the recognition of needs of a target population (diabetics) in the community.

Reference

Langley, G. J., Nolan, K.M., & Nolan, T.W. (1994). The foundation of improvement, *Quality Progress*, 81-86.